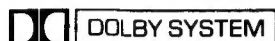


# Service Manual

Cassette Deck

## RS-M10

Front-Loading Vartical Hold Stereo  
Cassette Deck with 3-Position Tape Selector



This is the Service Manual for the following areas.

- DOL** ..... For All European areas  
except United Kingdom.  
**B** ..... For United Kingdom.

### RS-631 MECHANISM SERIES

#### Specifications (Catalog specifications for sales)

Power requirement:	AC; 110/125/220/240V, 50/60Hz 240V, 50Hz only for England	Input:	MIC; sensitivity 0.25mV, input impedance 33 K $\Omega$ , applicable microphone impedance 400 $\Omega$ ~10 K $\Omega$ LINE; sensitivity 60 mV, input impedance 47 K $\Omega$
Power consumption:	10W	Output:	LINE; output level 420 mV, output impedance 1 K $\Omega$ or less, load impedance 22 K $\Omega$ over HEADPHONE; output level 65 mV, load impedance 8 $\Omega$
Motor:	Electronic control DC motor	Rec/pb connection:	5P DIN type; input sensitivity 1 mV, impedance 8.2 K $\Omega$ output level 420 mV, impedance 47 K $\Omega$
Track system:	4-track 2-channel stereo recording and playback	Bias frequency:	80 kHz
Tape speed:	4.8 cm/s (1-7/8 ips.)	Head:	2-head system; 1-SP head for record/playback 1-double-gap ferrite head for erasure
Wow and flutter:	0.06% (WRMS), $\pm$ 0.15% (DIN)	Dimensions:	43.0cm(W) $\times$ 14.2cm(H) $\times$ 25.1cm(D) [16-7/8"(W) $\times$ 5-5/8"(H) $\times$ 9-7/8"(D)]
Frequency response:	CrO <sub>2</sub> /FeCr tape; 25~15,000Hz 30~14,000Hz (DIN) Normal tape; 25~14,000Hz 30~13,000Hz (DIN)	Weight:	5.0 kg (11 lbs.)
Signal-to-noise ratio:	Dolby* NR in; 66 dB (above 5 kHz) Dolby NR out; 56 dB (signal level = max. recording level, FeCr/CrO <sub>2</sub> type tape)		
Fast forward and rewind time:	Approx. 86 seconds with C-60 cassette tape		

Specifications are subject to change without notice.

\* 'Dolby' and the double-D symbol are trademarks of Dolby Laboratories.

# Technics

Matsushita Electric Trading Co., Ltd.  
P.O. Box 288, Central Osaka Japan

# LOCATION OF CONTROLS AND COMPONENTS

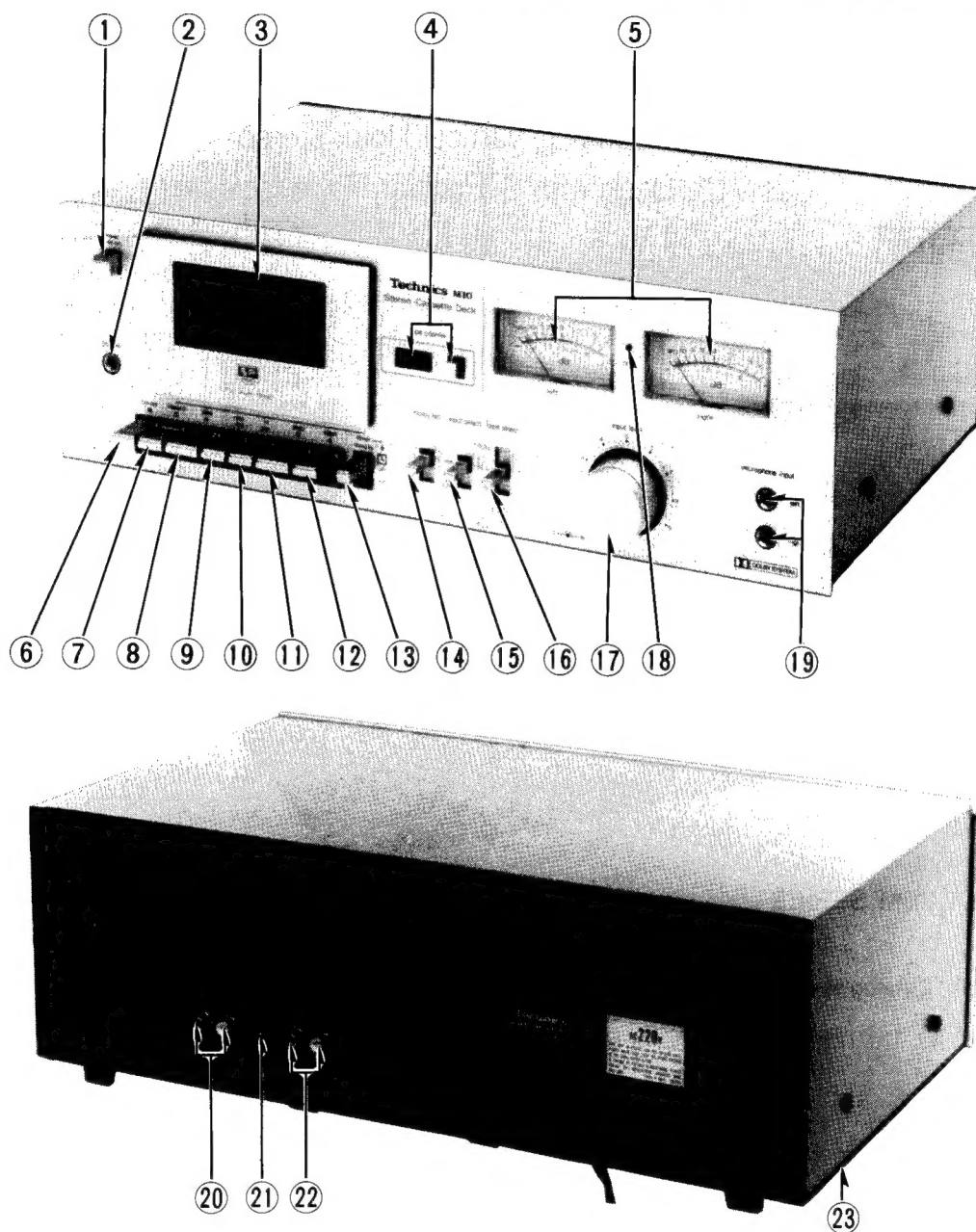


Fig. 1

- |                                 |                                     |
|---------------------------------|-------------------------------------|
| ① Power switch                  | ⑫ Eject button                      |
| ② Headphones jack               | ⑬ Timer stand-by button             |
| ③ Cassette compartment door     | ⑭ Dolby noise-reduction switch      |
| ④ Tape counter and reset button | ⑮ Input selector                    |
| ⑤ Level meters                  | ⑯ Tape selector                     |
| ⑥ Pause button                  | ⑰ Input level control               |
| ⑦ Record button                 | ⑱ Recording indication lamp         |
| ⑧ Playback button               | ⑲ Microphone input jacks            |
| ⑨ Rewind button                 | ⑳ Line output jacks                 |
| ⑩ Fast forward button           | ㉑ Record/playback connection socket |
| ⑪ Stop button                   | ㉒ Line input jacks                  |
|                                 | ㉓ AC power voltage select switch    |

# DISASSEMBLY INSTRUCTIONS

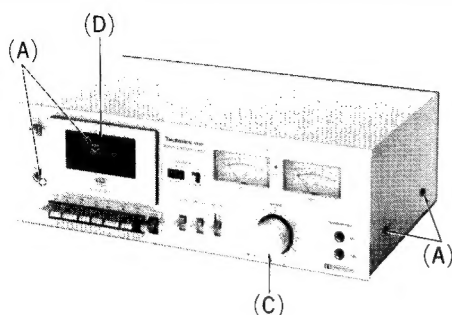


Fig. 2

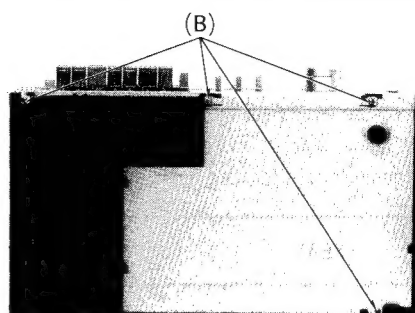


Fig. 3

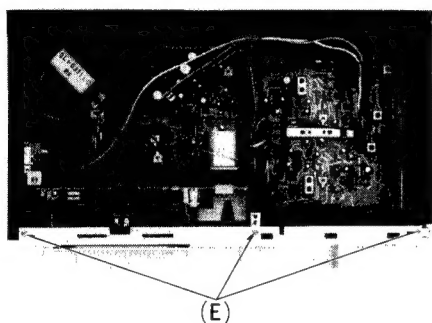


Fig. 4

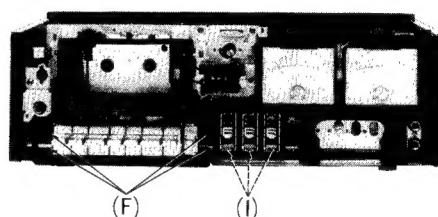


Fig. 5

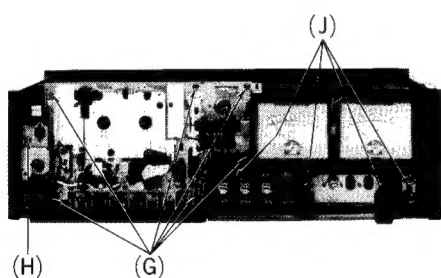


Fig. 6

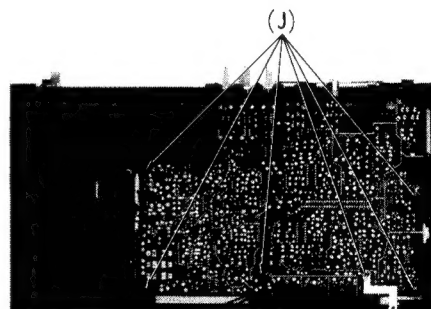


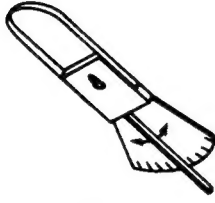
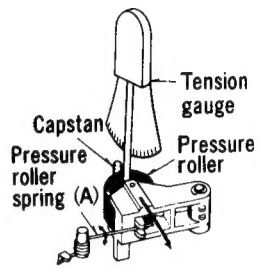
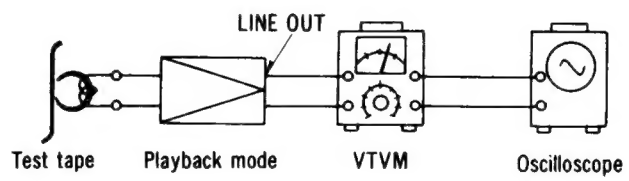
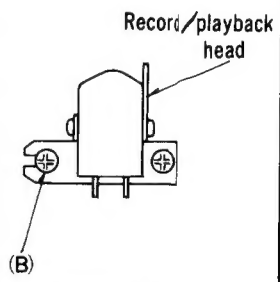
Fig. 7

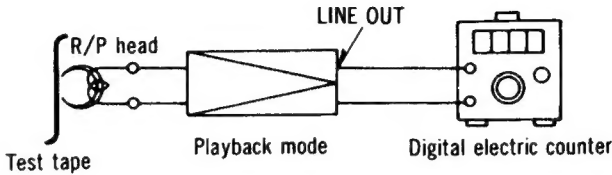
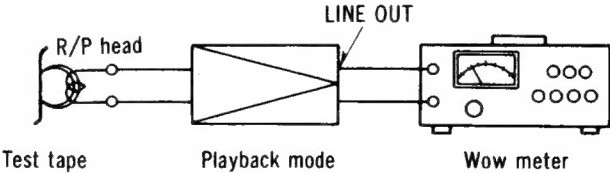
Procedure	To remove ——— .	Remove ——— .	Shown in fig. ——— .
1	Case cover	• 4 black screws ..... (A)	2
2	Bottom cover	• 4 screws ..... (B)	3
3	Front panel	• Control knob ..... (C)	2
		• Cassette lid ..... (D)	2
		• 3 screws ..... (E)	4
4	Control button assembly and cassette holder	• 4 red screws ..... (F)	5
5	Mechanism	• 6 red screws ..... (G)	6
		• Headphone holding screw ..... (H)	6
5	Circuit board	• 3 switch shelters ..... (I)	5
		• 10 screws ..... (J)	6, 7

# MEASUREMENT AND ADJUSTMENT METHOD

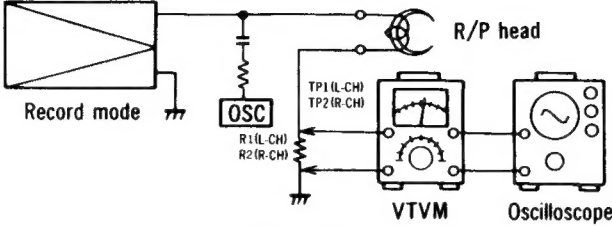
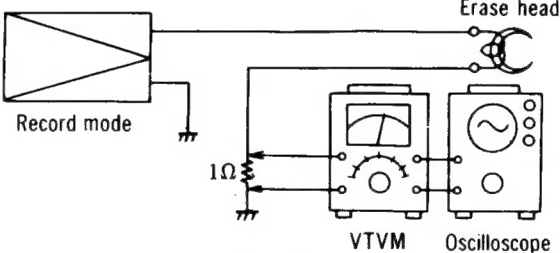
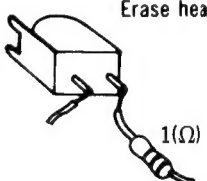
## NOTE:

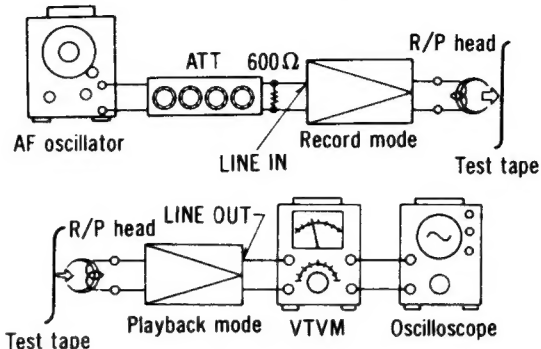
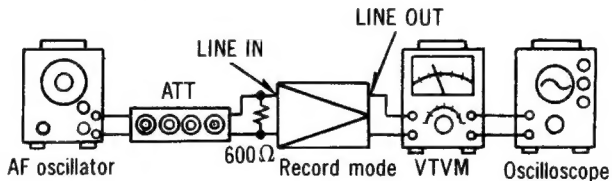
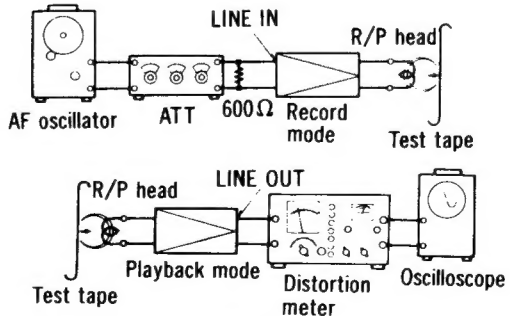
1. Make sure heads are clean.
2. Make sure capstan and pressure roller are clean.
3. Judgeable room temperature:  $20 \pm 5^{\circ}\text{C}$  ( $68 \pm 9^{\circ}\text{F}$ ).
4. Dolby NR switch: OUT.
5. Tape selector: Normal.

ITEM	MEASUREMENT & ADJUSTMENT	REMARKS
<b>Pressure of pressure roller</b> Equipment: * Tension gauge (max. 500 gr)  <b>Fig. 8</b>	<ol style="list-style-type: none"> <li>Place UNIT into playback mode.</li> <li>Hook the tension gauge to pressure roller lever and pull it in the direction of the arrow as shown in fig. 9.</li> <li>Measure the tension at the moment when the pressure roller moves away from the capstan.</li> </ol> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>Standard value: <math>350 \pm 50</math> gr</b> </div> <p><b>Adjustment method</b>            Bend the part (A) of the pressure roller spring in either direction shown by the arrow until the correct pressure is attained.</p>	* Playback mode  <b>Fig. 9</b>
<b>Takeup tension</b> Equipment: * Cassette torque meter ... QZZSRKCT	<ol style="list-style-type: none"> <li>Mount cassette torque meter on UNIT.</li> <li>Place UNIT into playback mode and read takeup torque.</li> <li>Measure several times and determine the mean value.</li> </ol> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>Standard value: <math>50 \pm 15</math> gr-cm</b> </div>	* Playback mode
<b>Head azimuth adjustment</b> Equipment: * VTVM * Oscilloscope * Test tape (azimuth) ... QZZCFM	<b>Record/playback head adjustment</b> <ol style="list-style-type: none"> <li>Test equipment connection is shown below.</li> </ol>  <b>Fig. 10</b> <ol style="list-style-type: none"> <li>Playback azimuth tape (QZZCFM 8kHz).</li> <li>Adjust record/playback head angle adjustment screw (B) in fig. 11 so that output level at LINE OUT becomes maximum.</li> <li>Measure both channels, and adjust levels for equal output.</li> <li>After adjustment lock head adjustment screw with lacquer.</li> </ol>	* Playback mode  <b>Fig. 11</b>

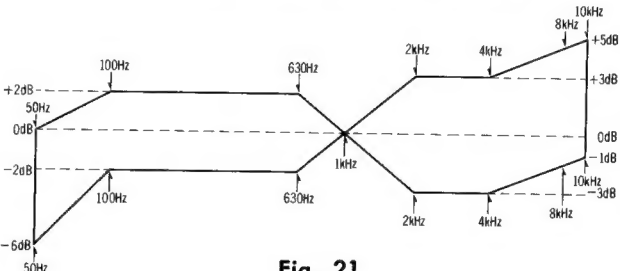
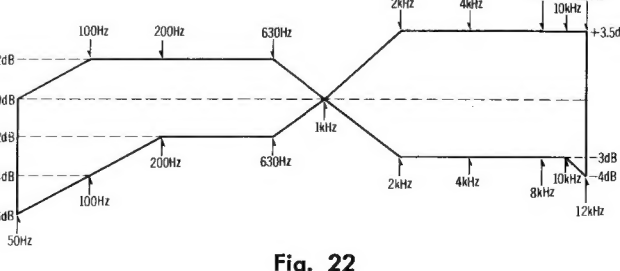
ITEM	MEASUREMENT & ADJUSTMENT	REMARKS
<p><b>Tape speed</b></p> <p>Equipment:</p> <ul style="list-style-type: none"> <li>* Digital electronic counter or frequency counter</li> <li>* Test tape ... QZZCWAT</li> </ul>	<p><b>Tape speed accuracy</b></p> <p>1. Test equipment connection is shown below.</p>  <p style="text-align: center;"><b>Fig. 12</b></p> <p>2. Playback test tape (QZZCWAT 3,000Hz), and supply playback signal to frequency counter.</p> <p>3. Measure this frequency.</p> <p>4. On the basis of 3,000Hz, determine value by following formula:</p> $\text{Tape speed accuracy} = \frac{f - 3,000}{3,000} \times 100 (\%)$ <p style="text-align: center;">where, f = measured value</p> <p>5. Take measurement at middle section of tape.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p><b>Standard value: <math>\pm 1.5\%</math></b></p> </div> <p><b>Adjustment method</b></p> <ol style="list-style-type: none"> <li>1. Playback the test tape (middle).</li> <li>2. Adjust so that frequency becomes 3,000Hz.</li> <li>3. Tape speed adjustment VR shown in fig. 26.</li> </ol> <p><b>Tape speed fluctuation</b></p> <p>Make measurements in same manner as above (beginning, middle and end of tape), and determine difference between maximum and minimum values and calculate as follows:</p> $\text{Tape speed fluctuation} = \frac{f_1 - f_2}{3,000} \times 100 (\%)$ <p style="text-align: center;">f<sub>1</sub> = maximum value f<sub>2</sub> = minimum value</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p><b>Standard value: 1%</b></p> </div>	<p>* Playback mode</p>
<p><b>Wow and flutter</b></p> <p>Equipment:</p> <ul style="list-style-type: none"> <li>* Wow meter</li> <li>* Test tape ... QZZCWAT</li> </ul>	<p>1. Test equipment connection is shown below.</p>  <p style="text-align: center;"><b>Fig. 13</b></p> <p>2. Use wow test tape (3,000Hz) and measure its playback signal on wow meter.</p> <p>3. Wow and flutter is expressed in percentage and that measurement can be weighted by JIS network (WRMS).</p> <p>4. Measure at middle section of test tape.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p><b>Standard value: 0.07% (WRMS)</b></p> </div>	<p>* Playback mode</p>

ITEM	MEASUREMENT & ADJUSTMENT	REMARKS
<b>Playback frequency response</b> Equipment: * VTVM * Oscilloscope * Test tape ... QZZCFM	<ol style="list-style-type: none"> <li>1. Test equipment connection is as same as "Head azimuth adjustment" but use the test tape (QZZCFM) instead of head azimuth tape (See fig. 10).</li> <li>2. Place UNIT into playback mode.</li> <li>3. Playback frequency response test tape.</li> <li>4. Measure output level at 8kHz, 4kHz, 1kHz, 315Hz, 250Hz, 125Hz and 63Hz and compare output level with standard frequency 315Hz, at LINE OUT.</li> <li>5. Make measurement for both channels.</li> <li>6. Make sure that the measured value is within the range specified in the frequency response chart.</li> </ol> <p style="text-align: center;"><b>Playback frequency response chart</b></p> <p style="text-align: center;"><b>Fig. 14</b></p> <p><b>Adjustment method</b>            If the measured value is not standard, adjust VR1 (L-CH), VR2 (R-CH).</p>	* Playback mode
<b>Playback gain</b> Equipment: * VTVM * Oscilloscope * Test tape ... QZZCFM	<ol style="list-style-type: none"> <li>1. Test equipment connection is shown in fig. 10.</li> <li>2. Playback standard recording level portion on test tape (QZZCFM 315 Hz), and using VTVM measure the output level at LINE OUT jack.</li> <li>3. Make measurement for both channels.</li> </ol> <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 10px auto; width: fit-content;"> <b>Standard value: 0.39V</b> </div> <p><b>Adjustment method</b></p> <ol style="list-style-type: none"> <li>1. If measured value is not standard, adjust VR3 (L-CH), VR4 (R-CH) (See fig. 26 on page 10).</li> <li>2. After adjustment, check "Playback frequency response" again.</li> </ol>	* Playback mode
<b>Playback S/N ratio</b> Equipment: * VTVM * Oscilloscope * Test tape ... QZZCFM * Empty cassette	<ol style="list-style-type: none"> <li>1. Test equipment connection is shown in fig. 10.</li> <li>2. Playback standard recording level test tape (QZZCFM 315Hz) and read output level on VTVM.                Refer to "Playback gain adjustment".</li> <li>3. Place empty cassette (which has been cut) and playback again.</li> <li>4. Measure noise level at this time using VTVM, and determine ratio of this level to test tape output signal voltage (315Hz).</li> </ol> <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 10px auto; width: fit-content;"> <b>Standard value: Greater than 45dB</b> </div>	* Playback mode

ITEM	MEASUREMENT & ADJUSTMENT	REMARKS
<b>Bias current</b> Equipment: * VTVM * Oscilloscope	<p>1. Test equipment connection is shown below.</p>  <p style="text-align: center;"><b>Fig. 15</b></p> <p>2. Place UNIT into record mode, and bias selector to "LOW".</p> <p>3. Read voltage on VTVM and calculate bias current by following formula:</p> $\text{Bias current (A)} = \frac{\text{Value read on VTVM (V)}}{10 (\Omega)}$ <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><b>Standard value:</b>          285<math>\mu</math>A (Normal position)          340<math>\mu</math>A (FeCr position)          380<math>\mu</math>A (CrO<sub>2</sub> position)</p> </div> <p>4. Adjust L5 (L-CH) and L6 (R-CH) (See adjustment parts location on page 10).</p>	<ul style="list-style-type: none"> <li>* Record mode</li> <li>* When bias current is the adjusted on one channel only, note that bias current on the other channel may vary.</li> <li>* When L5 or L6 is the replaced, preset core position to bottom side of coil and then readjust optimum bias current.</li> </ul>
<b>Erase current</b> Equipment: * VTVM * Oscilloscope * Resistor (1 $\Omega$ )	<p>1. Connect 1<math>\Omega</math> resistor between the ground side terminal of erase head ground lead wire removed (See fig. 17).</p> <p>2. Connect VTVM to both ends of 1<math>\Omega</math> resistor.</p>  <p style="text-align: center;"><b>Fig. 16</b></p> <p>3. Place UNIT into record mode, and measure voltage across the 1<math>\Omega</math> resistor.</p> <p>4. Determine erase current with the following formula:</p> $\text{Erase current (A)} = \frac{\text{Voltage across both ends of } 1\Omega \text{ resistor}}{1\Omega}$ <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><b>Standard value:</b>          More than 40mA (Normal position)          More than 45mA (FeCr position)          More than 55mA (CrO<sub>2</sub> position)</p> </div>	<ul style="list-style-type: none"> <li>* Record mode</li> </ul>  <p style="text-align: center;"><b>Fig. 17</b></p>

ITEM	MEASUREMENT & ADJUSTMENT	REMARKS
<b>Overall gain</b> Equipment: * AF oscillator * VTVM * ATT * Oscilloscope * Test tape (reference blank tape) ... QZZCRA for Normal	1. Test equipment connection is shown in fig. 18.  <b>Fig. 18</b> 2. Place UNIT into record mode, and tape selector to normal position. 3. Supply 1 kHz signal ( $-24\text{ dB}$ ) from AF oscillator, through ATT, to LINE IN. 4. Adjust ATT until monitor level at LINE OUT becomes $0.39\text{ V}$ ( $-7\text{ dB}$ ). 5. Using test tape, make recording. 6. Playback recorded tape, and make sure the value at LINE OUT on VTVM becomes $0.39\text{ V}$ . 7. If measured value is not $0.39\text{ V}$ , adjust VR5 (L-CH), VR6 (R-CH) (See fig. 26 on page 10). 8. Repeat from step (2).	* Record/playback mode * INPUT level control ... MAX * Standard input level: MIC..... $-72 \pm 3\text{ dB}$ LINE IN .. $-24 \pm 3\text{ dB}$ DIN..... $-36 \pm 3\text{ dB}$
<b>Level meter</b> Equipment: * VTVM * Oscilloscope * AF oscillator * ATT	1. Test equipment connection is shown in fig. 19.  <b>Fig. 19</b> 2. Supply 1 kHz signal from the AF oscillator, through the ATT, to the LINE IN jack. 3. Adjust ATT so that the monitor level at LINE OUT becomes $0.39\text{ V}$ . 4. Adjust VR501 (L-CH) and VR502 (R-CH) so that the level meters indicate $0\text{ dB}$ .	* Record mode * INPUT level control ... MAX
<b>Overall distortion</b> Equipment: * Distortion meter * AF oscillator * ATT * Oscilloscope * Test tape (reference blank tape) ... QZZCRA for Normal ... QZZCRX for $\text{CrO}_2$ ... QZZCRY for FeCr	1. Test equipment connection is shown in fig. 20.  <b>Fig. 20</b>	* Record/playback mode * INPUT level control ... MAX



ITEM	MEASUREMENT & ADJUSTMENT	REMARKS
	<p>2. Supply 1kHz signal to LINE IN and adjust ATT so that output level at LINE OUT indicates 0.39 V.</p> <p>3. Make recording.</p> <p>4. Playback and measure distortion factor of output signal.</p> <p>5. When the distortion factor does not satisfy the standard, check the bias current. When the bias current is lower than standard, distortion will increase.</p> <p>Care should be exercised in the adjustment because the bias current also has an influence on the overall frequency response. Refer to "The overall frequency response" and "The bias current adjustment".</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p><b>Standard value:</b>  <b>Less than 3.0% (Normal position)</b>  <b>Less than 4.0% (CrO<sub>2</sub>, FeCr position)</b></p> </div>	
<p><b>Overall frequency response</b></p> <p>Equipment:</p> <ul style="list-style-type: none"> <li>* VTVM</li> <li>* AF oscillator</li> <li>* ATT</li> <li>* Test tape (reference blank tape)</li> <li>... QZZCRA for Normal</li> <li>... QZZCRX for CrO<sub>2</sub></li> <li>... QZZCRY for FeCr</li> </ul>	<p><b>Note:</b></p> <p>Before measuring, and adjusting, make sure of the playback frequency response (For the method of measurement, please refer to the playback frequency response).</p> <ol style="list-style-type: none"> <li>1. Test equipment connection is shown in fig. 18.</li> <li>2. Load reference blank test tape and place UNIT into record mode.</li> <li>3. Supply 1kHz signal from AF oscillator through ATT to LINE IN.</li> <li>4. Adjust ATT so that input level is -20 dB below standard recording level (standard recording level -24 dB).</li> <li>5. Record each frequency 50 Hz, 100 Hz, 200 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz and 10 kHz (12 kHz for CrO<sub>2</sub> and FeCr tape) at the same level.</li> <li>6. Playback and express in dB the difference between playback output level of each frequency based on playback output level of 1 kHz.</li> <li>7. Make sure that the measured value is within the range specified in the overall frequency response chart.</li> </ol> <p style="text-align: center;"><b>Overall frequency response chart (Normal)</b></p>  <p style="text-align: center;"><b>Fig. 21</b></p> <ol style="list-style-type: none"> <li>8. Set the tape selector to CrO<sub>2</sub>, FeCr position.</li> <li>9. Measure as same as manner above.</li> <li>10. Make sure that the measured value is within the range specified in the overall frequency response chart for CrO<sub>2</sub> and FeCr tape below.</li> </ol> <p style="text-align: center;"><b>Overall frequency response chart (FeCr)</b></p>  <p style="text-align: center;"><b>Fig. 22</b></p>	<ul style="list-style-type: none"> <li>* Record/playback mode</li> <li>* INPUT level control</li> <li style="text-align: right;">... MAX</li> </ul>

ITEM	MEASUREMENT & ADJUSTMENT	REMARKS
	<p align="center"><b>Overall frequency response chart (CrO<sub>2</sub>)</b></p> <p align="center"><b>Fig. 23</b></p>	
<b>Overall frequency response adjustment</b> (As a standard for adjustment)	<p><b>Adjustment 1—Using bias current</b></p> <ol style="list-style-type: none"> <li>When the frequency response between the middle and high-frequency range becomes higher than the standard value, as shown by the solid line in fig. 24, increase the bias current by turning L5 (L-CH), L6 (R-CH).</li> <li>When it becomes lower, as shown by dotted line, reduce the bias current by turning L5 (L-CH), L6 (R-CH).</li> </ol> <p><b>Note:</b> For the method of bias current measurement, refer to "Bias current adjustment" on page 6.</p> <p align="center"><b>Fig. 24</b></p> <p><b>Adjustment 2—Using the peaking coil for recording equalization</b></p> <p>When the frequency response is flat in the middle-frequency range and makes a sharp rise or drop in the high-frequency range, as shown in fig. 25, adjust by turning the peaking coil L3 (L-CH), L4 (R-CH) for normal tape recording equalization.</p> <p align="center"><b>Fig. 25</b></p>	
<b>Dolby NR circuit</b> Equipment: * VTVM * AF oscillator * ATT * Oscilloscope	<ol style="list-style-type: none"> <li>Place UNIT into record mode, set the Dolby NR switch to OUT position and supply to LINE IN to obtain <math>-34.5\text{dB}</math> at TP3 (L-CH), TP4 (R-CH) (frequency 5kHz).</li> <li>Confirm that the value at IN position is <math>8(\pm 2.5)\text{dB}</math> greater than the value at OUT position of Dolby NR switch.</li> </ol>	* Record mode * INPUT level control ... MAX
<b>Overall S/N ratio</b> Equipment: * VTVM * AF oscillator * ATT * Oscilloscope * Test tape (reference blank tape) ... QZZCRA	<ol style="list-style-type: none"> <li>Test equipment connection is shown in fig. 18.</li> <li>Supply 1kHz signal to LINE IN and adjust ATT so that output level at LINE OUT indicates 0.39V.</li> <li>Make recording.</li> <li>Make another recording without supplying signal (disconnect input plug to LINE IN).</li> <li>Rewind to recorded part and playback.</li> <li>Measure output signal level and no signal level (noise), and determine the ratio in decibels (dB).</li> <li>The value is difference between "Playback S/N and overall S/N", but for decibel calculation refer to "Playback S/N measurement" on page 5.</li> </ol> <div style="border: 1px solid black; padding: 5px; margin-top: 10px; text-align: center;"> <b>Standard value:</b>  <b>Greater than 43dB (without NAB filter)</b> </div>	* Record/playback mode * INPUT level control ... MAX  * Erase the tape with a bulk tape eraser.

## ADJUSTMENT PARTS LOCATION

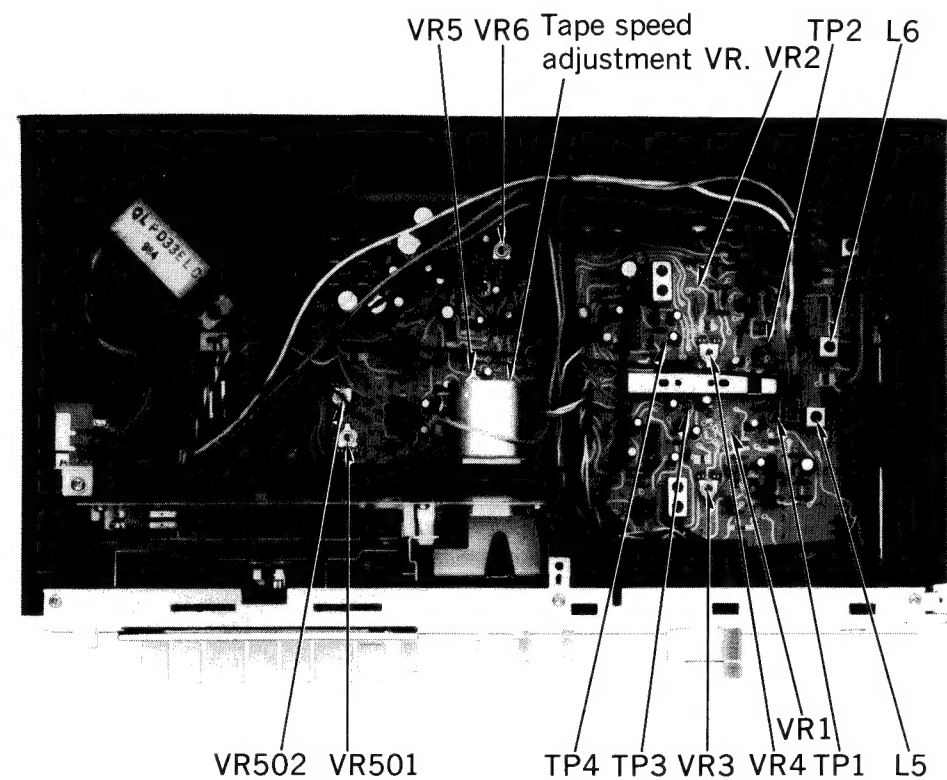
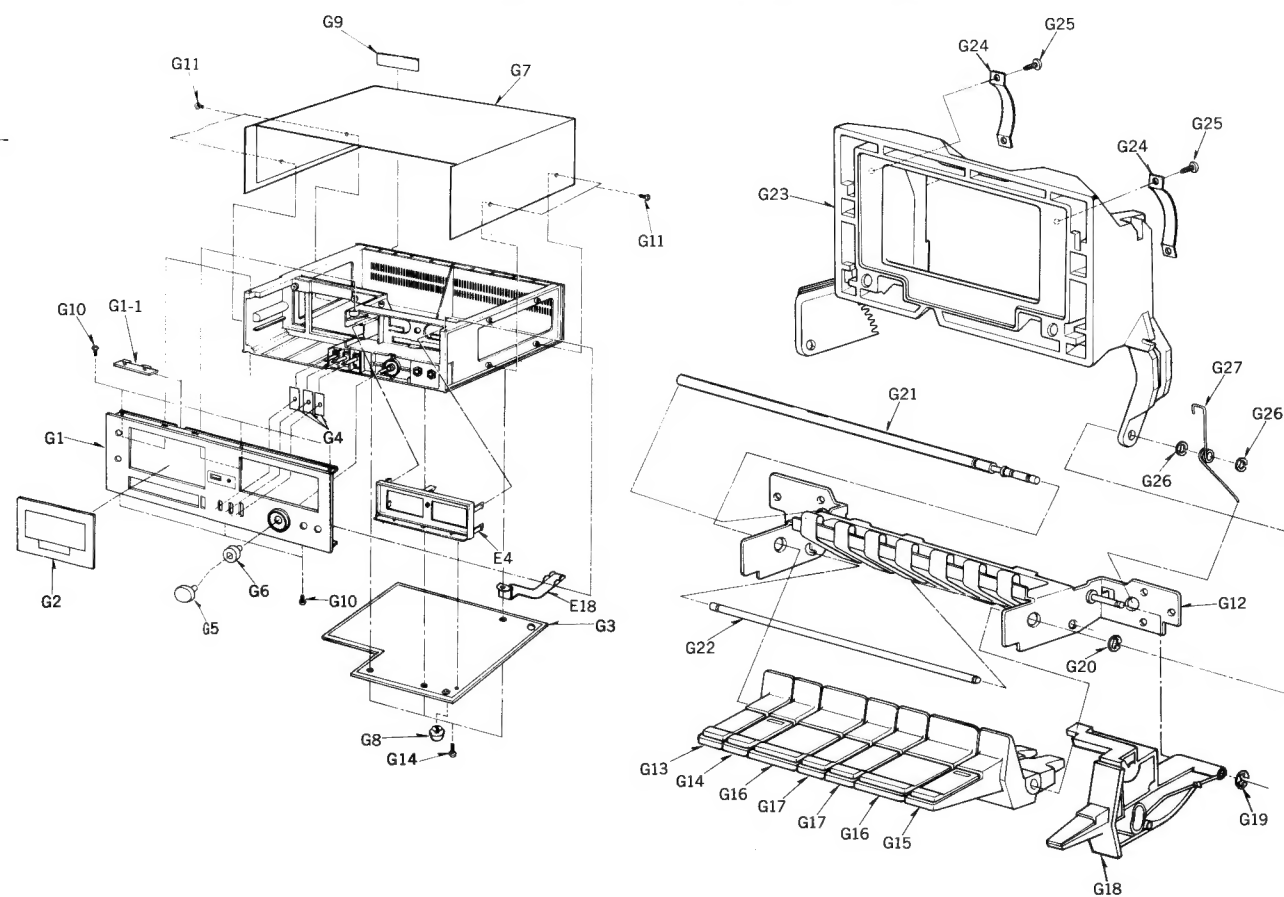


Fig. 26

## CABINET PARTS

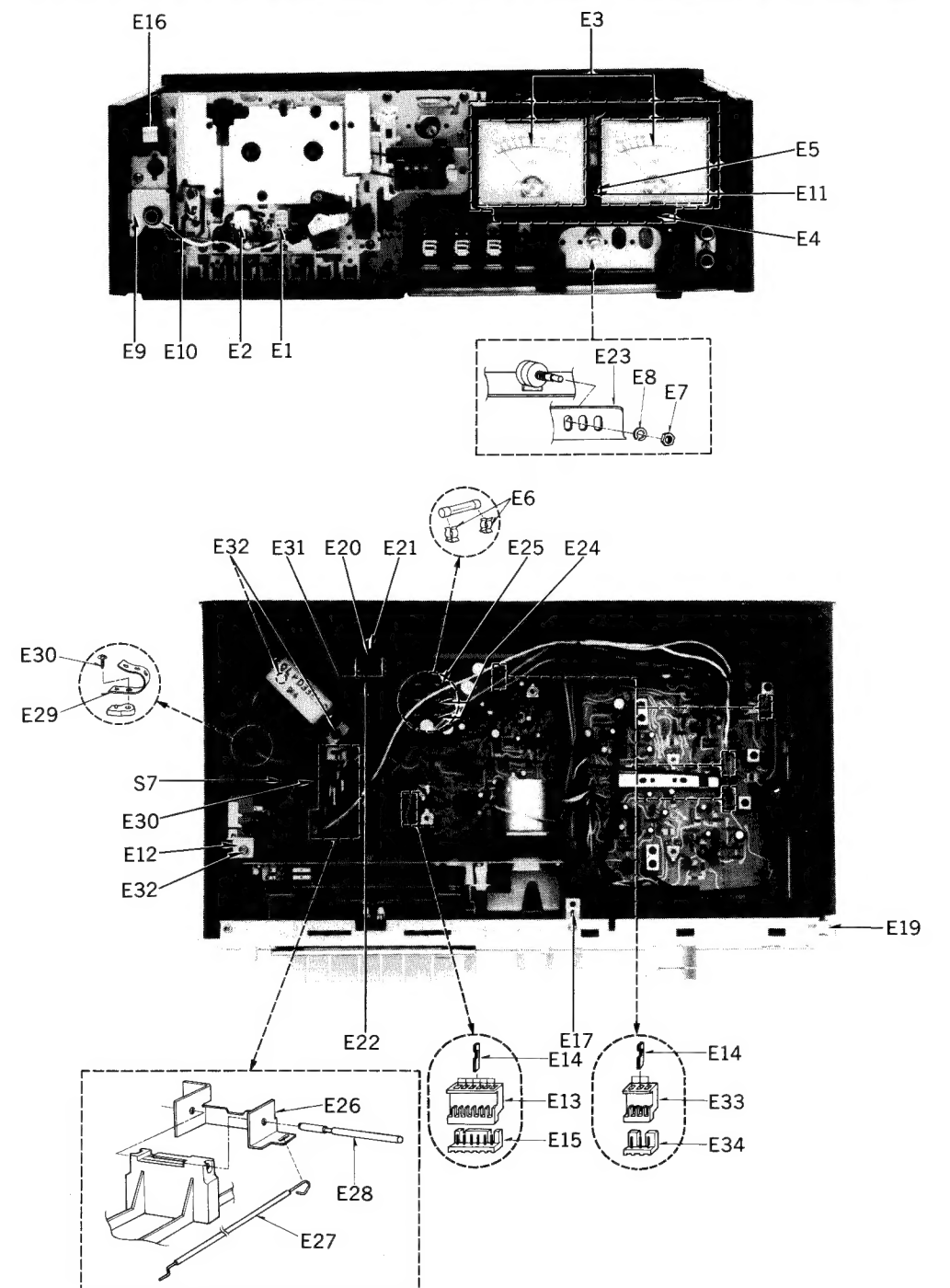


Ref. No.	Part No.	Part Name & Description
<b>CABINET PARTS</b>		
G1	QYP0826	Front Panel Assembly
	(QYP0842)	Front Panel Assembly
G1-1	QKJ0328	Stopper
G2	QYF0357	Cassette Lid Assembly
	(QYF0358)	Cassette Lid Assembly
G3	QGC1135	Bottom Board Assembly
G4	QK2940	Switch Shelter
	(QK2938)	Switch Shelter
G5	QYT0520	Volume Knob-1
	(QYT0524)	Volume Knob-1
G6	QYT0521	Volume Knob-2
	(QYT0521K)	Volume Knob-2
G7	QGC1139	Case Cover
	(QGC1139K)	Case Cover
G8	QKA1078	Rubber Foot
G9	QGS2636	Main Name Plate
		*For All European Area Except United Kingdom
G9	QGS2637	Main Name Plate
		*For United Kingdom
G10	XTN3+10B	Tapping Screw $\phi 3 \times 10$
G11	XTN4+10B	Tapping Screw $\phi 4 \times 10$
G12	QXA0637	Push Button Holding Angle
G13	QGO1473	Pause Button
	(QGO1551)	Pause Button
	(QGO1552)	Pause Button
G14	QGO1474	Record Button
	(QGO1552)	Record Button
G15	QGO1475	Eject Button
	(QGO1553)	Eject Button
G16	QGO1476	Playback, Stop Button
	(QGO1554)	Playback, Stop Button
G17	QGO1477	Fast Forward, Rewind Button
	(QGO1555)	Fast Forward, Rewind Button
G18	QXB0508	Timer Button Assembly
	(QXB0616)	Timer Button Assembly
G19	XUC25FT	Stop Ring 2.5 $\phi$
G20	XUC4FT	Stop Ring 4 $\phi$
G21	QMN2382	Push Button Shaft-A
G22	QMN1861	Push Button Shaft-B
G23	QYF0360	Cassette Holder Assembly
G24	QBP1818	Holder Spring
G25	XTN26+5B	Tapping Screw $\phi 2.6 \times 5$
G26	XUC3FT	Stop Ring 3 $\phi$
G27	QBW1641	Lid Spring

NOTE: ■ indicates that only parts specified by the manufacturer be used for safety.

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
<b>ELECTRICAL PARTS</b>			<b>ELECTRICAL PARTS</b>			<b>ELECTRICAL PARTS</b>			<b>ACCESSORIES</b>		
E1	QWY41132	Record/Playback Head	E14	QJT1054	Contact	E22	■ RJA45ZCK	AC Power Cord	A1	QEB0125	Connection Cord
E2	QWY21222A	Erase Head	E15	QJT0055	Pin Connector			*For United Kingdom	A2	QQT2475	Instruction Book
E3	QSL1107RNM	Level Meter	E16	QXB0600	Push Button Assembly	E23	■ QMA3670	Volume Angle			*For All European Area Except United Kingdom
E4	QKJ0329	Level Meter Holder		(QXB0600K)	Push Button Assembly	E24	■ XBAQ0007	"			*For United Kingdom
E5	QBG1366	Rubber Bushing	E17	QTS1458	Earth Plate-A	E25	■ QMA3673	Recording Angle	A2	QQT2476	"
E6	QTF1054	Fuse Holder			Earth Plate-B	E26	QBS1122	Recording Wire			
E7	QNQ1039	Nut	E18	QTS1459	Earth Plate-C	E27	QMN2381	Recording Shaft			
E8	QWQ1133	Washer	E19	QYF0359	Cord Bushing	E28	RME1442A	Cord Clamper			
E9	QMA3671	Headphone Jack Angle	E20	QTD1164	"	E29					
E10	QNQ1070	Nut	E21	QBJ1425	AC Power Cord Bushing	E30	XTN3+10B	Screw $\phi 3 \times 10$	P1	QPN3789	Inside Carton
E11	XAMQ22P200N	Pilot Lamp	E22	■ RJA23ZCK	AC Power Cord	E31	XTN3+16B	Screw $\phi 3 \times 16$	P2	QPA0459	Cushion-A
E12	QMA3672	Power Switch Angle			*For All European Area Except United Kingdom	E32	XTW3+12B	Screw $\phi 3 \times 12$	P3	QPA0406	Cushion-B
E13	QJS1922TN	6 Pin Housing				E33	QJS1921TN	3 Pin Housing	P4	XZB16X22A05	Poly Bag
						E34	QJP1921TN	3 Pin Post	P5	XZB40X60A02	"

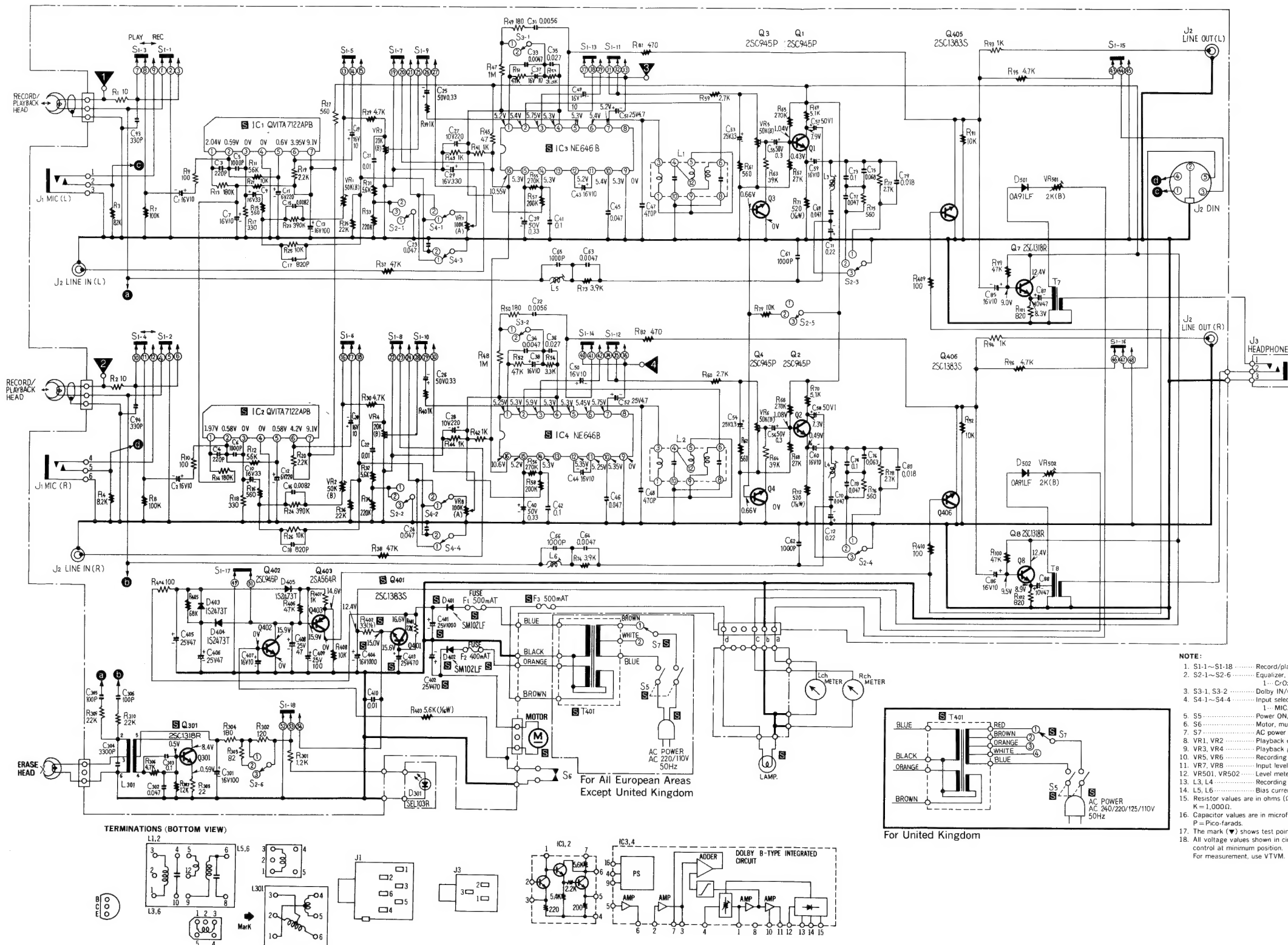
## ELECTRICAL PARTS LOCATION



# SCHEMATIC DIAGRAM MODEL RS-M10

**NOTE: RESISTORS**  
 ERD ... Carbon  
 ERG ... Metal-oxide  
 ERO ... Metal-film  
 ERX ... Metal-film  
 ERQ ... Fuse type metallic  
 ERC ... Solid  
 ERF ... Cement

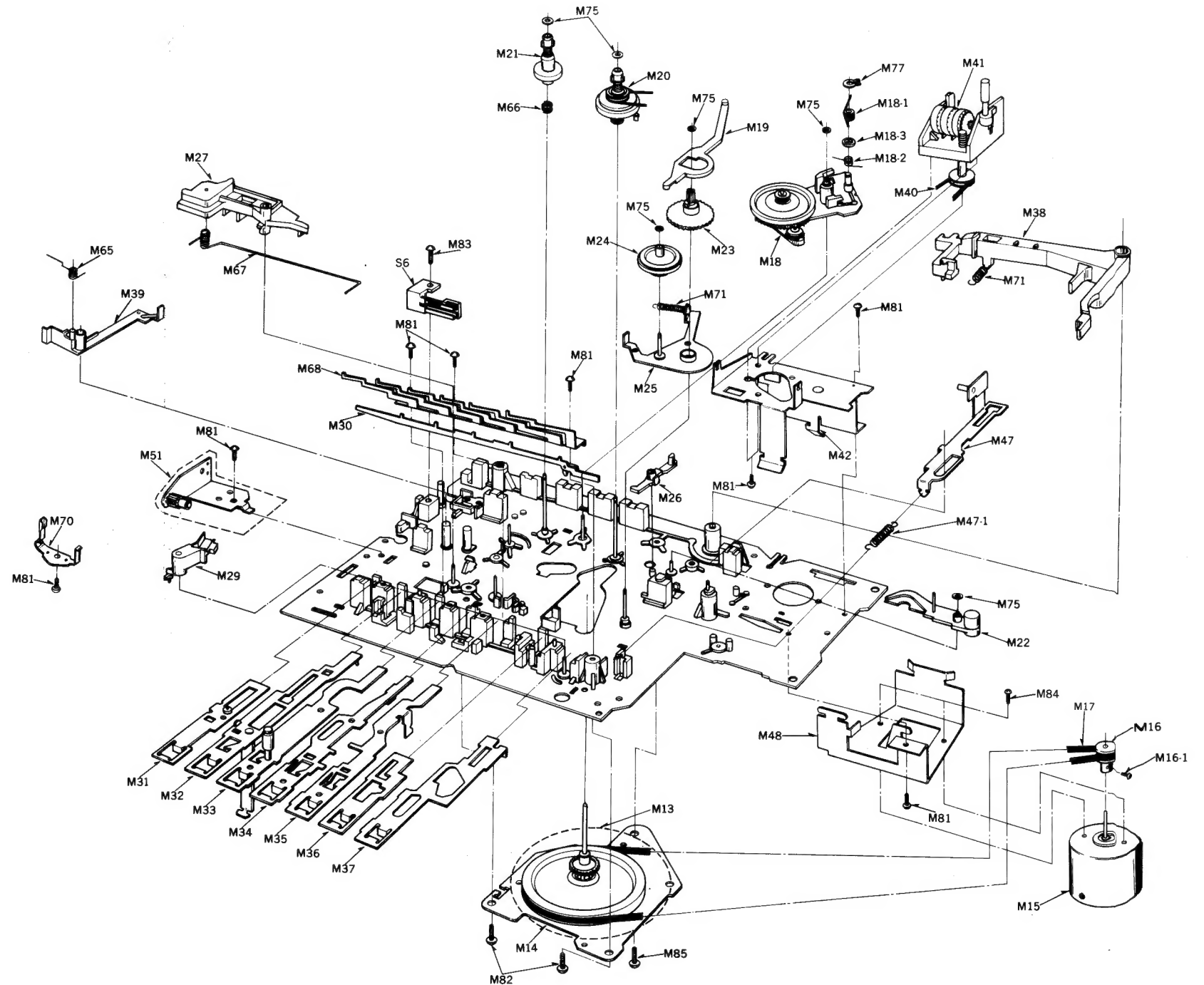
**CAPACITORS**  
 ECG ... Ceramic  
 ECK ... Ceramic  
 ECC ... Ceramic  
 ECF ... Ceramic  
 ECQ ... Polyester  
 ECQM ... Polyester  
 ECQF ... Polypropylene  
 ECE ... Electrolytic  
 ECE ... Non polar electrolytic  
 ECQS ... Polystyrene  
 ECS ... Tantalum



- NOTE:**
- S1-1 ~ S1-18 ..... Record/playback select switch (shown in playback position).
  - S2-1 ~ S2-6 ..... Equalizer, bias select switch.
  - S3-1, S3-2 ..... Dolby IN/OUT select switch (shown in OUT position).
  - S4-1 ~ S4-4 ..... Input select switch.
  - S5 ..... Power ON/OFF switch.
  - S6 ..... Motor, muting switch.
  - S7 ..... AC power voltage select switch.
  - VR1, VR2 ..... Playback equalizer adjustment VR.
  - VR3, VR4 ..... Playback gain adjustment VR.
  - VR5, VR6 ..... Recording gain adjustment VR.
  - VR7, VR8 ..... Input level control.
  - VR501, VR502 ..... Level meter adjustment VR.
  - L3, L4 ..... Recording equalizer adjustment coil.
  - L5, L6 ..... Bias current adjustment coil.
  - Resistor values are in ohms ( $\Omega$ ), 1/4 watt unless specified otherwise.
  - K = 1,000.
  - Capacitor values are in microfarads ( $\mu$ F) unless specified otherwise.
  - P = Picofarads.
  - The mark (•) shows test point. e.g. V = Test point 1.
  - All voltage values shown in circuitry are under no signal condition with volume control at minimum position.
  - For measurement, use VTVM.

Ref. No.	Part No.	Ref. No.	Part No.
<b>RESISTORS</b>			
R1, 2	ERD25TJ100	C87, 88	ECEA1AS470
R9, 10	ERD25TJ101	C93, 94	ECCD1H331K
R13, 14	ERD25TJ184	C301	ECEA1ES101
R17, 18	ERD25TJ331	C302	ECFTD473KXD
R19, 20	ERD25TJ222	C303	ECFWD104MXD
R23, 24	ERD25TJ394	C304	ECQS1102KZ
R25, 26	ERD25TJ103	C305, 306	ECCD1H101K
R27	ERD25TJ331	C401	ECEA1ES102
R31, 32	ERD25TJ562	C402, 403	ECEA1ES471
R37, 38	ERD25TJ473	C404	ECEA1CS102
R41, 42, 43, 44	ERD25TJ102	C405, 406	ECEA1ES470
R45	ERG12ANJ470	C407	ECEA1HS100
R47, 48	ERD25TJ105	C408	ECEA2524R7
R49, 50	ERD25TJ181	C409	ECEA1ES101
R53, 54	ERD25TJ332	C410	ECCD1H103ZF
R63, 64	ERD25TJ393		
R75, 76	ERD25TJ561		
R77, 78	ERD25TJ272		
R93, 94	ERD25TJ102		
R101, 102	ERD25TJ821		
R301	ERD25TJ122		
R302	ERG12ANJ121		
R303	ERD25TJ820		
R304	ERG12ANJ181		
R305	ERD25TJ220		
R309, 310	ERD25TJ223		
R401	ERD25TJ222		
R402	ERG12ANJ470		
R404	ERG12ANJ101		
R407	ERD25TJ102		
<b>VARIABLE RESISTORS</b>			
VR1, 2	EVLS3AA00B54		
VR3, 4	EVLS3AA00B24		
VR5, 6	EVLS3AA00B54		
VR7, 8	EWKN3AF21A15		
VR501, 502	EVLS3AA00B23		
<b>CAPACITORS</b>			
C1, 2	ECEA16Z10		
C3, 4	ECCD1H221K		
C5, 6	ECCD1H102ZF		
C7	ECEA1HS100		
C9, 10	ECEA1CS330		
C11, 12	ECEA1AS221		
C13	ECEA1ES101		
C15, 16	ECFTD82KVD		
C17, 18	ECCD1H821KB		
C19, 20	ECEA1HS100		
C21, 22	ECFTD103KVD		
C23, 24	ECFTD473MXD		
C25, 26	ECEA50MR33		
C27, 28	ECEA1AS221		
C29	ECEA1CS331		
C31, 32	QCQ605562J2T		
C33, 34	QCQ605472J2T		
C35, 36	QCQ605273J2T		
C37, 38	ECEA1HS100		
C39, 40	ECEA50ZR33		
C41, 42	ECFWD104MXD		
C43, 44	ECEA1HS100		
C45, 46	ECFTD473MXD		
C47, 48	ECCD1H471KB		
C49, 50	ECEA1HS100		
C51, 52	ECEA2524R7		
C53, 54	ECEA502R3		
C55, 56	ECEA502R1		
C57, 58	ECEA1HS101		
C59, 60	ECEA1HS100		
C61, 62	ECCD1H102MD		
C63, 64	ECFTD472KVD		
C65, 66	ECQS1102KZ		
C69, 70	ECFTD473KXD		
C71, 72	ECEA502R22		
C73, 74	ECFWD104KXD		
C75, 76	ECFTD683KXD		
C77, 78	ECFTD473KXD		
C79, 80	ECFTD183KVD		
C85, 86	ECEA1HS100		

## EXPLODED VIEWS



Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
		<b>MECHANICAL PARTS</b>	M36	QMR1622	Stop Rod-A
			M37	QMR1621	Eject Rod-A
M1	QML2898	Pause Lock Plate	M38	QML3038	Switch Arm
M2	QML1612	Head Base Plate	M39	QML3287	Brake Lever
M3	QXK1951	Upper Base Plate Assembly	M40	QDB0240	Counter Belt
M4	QML3047	Obstruction Lever	M41	QXC0040	Tape Counter
M5	QML3048	Driving Lever		"Silver Type"	
M6	QXL1057	Pressure Roller Lever Assembly		(QXC0041)	"
M7	QX10098	Takeup Idler Assembly		"Black Type"	
M8	QML3051	Erase Safety Lever	M42	QMA3676	Counter Angle
M9	QMC0061	Erase Head Spacer	M47	QXR0403	Eject Rod-B
M10	QDK1012	Steel Ball 2.5φ	M47-1	QBT1619	Idler Spring
M11	QMF2063	Chassis Cover	M48	QMA3414	Motor Angle
M12	QMA3169	Shaft Reinforcement Angle	M49	QXG1040	Damper Gear Assembly
M13	QXF0131	Flywheel Assembly	M55	QBN1515	Connection Spring
M14	QXH0239	Flywheel Retainer Assembly			
M15	MMC6A2HYA	Motor	M56	QBC1278	Head Spring
M16	QXP0572	Motor Pulley Assembly	M57	QBP1841	Head Base Plate Pressure Spring
M16-1	XSX2+3	Screw $\phi 2 \times 3$	M58	QBN1488	Pressure Roller Spring
M17	QDB0236	Flywheel Belt	M59	QBN1481	Playback Spring
M18	QXL1136	Fast Forward Arm Assembly	M60	QBN1480	Pause Lock Spring
M18-1	QBN1517	Fast Forward Spring	M61	QBN1514	Timer Spring
			M62	QBC1193	Safety Lever Spring
M18-2	QBN1559	Fast Forward Arm Spring	M63	QBN1513	Idler Spring
M18-3	QMC0080	Collar	M64	QBP1723	Click Spring
M19	QML3040	Cam Lever	M65	QBN1574	Brake Spring
M20	QXD0067	Takeup Reel Table Assembly			
M21	QXD0084	Supply Reel Table Assembly	M66	QBC1338	Back Tension Spring
M22	QXL1055	Auto-Stop Lever Assembly	M67	QBN1555	Pause Spring
M23	QDG1096	Cam Gear	M68	QBP1664	Operation Rod Spring
M24	QXG1026	Auto-Stop Gear Assembly	M70	QBP1662	Lock Rod Spring
M25	QXL1037	Gear Lever Assembly	M71	QBT1682	Lock Holding Spring
M26	QML3042	Auto-Stop Obstruction Lever	M75	QBW2008	Snap Washer
			M76	QBW2046	"
M27	QML3217	Pause Lever	M77	XUB4FT	Stop Ring C4φ
M29	QML3124	Lock Release Arm	M79	QHQ1226	Screw
M30	QMR1735	Lock Rod Assembly	M80	XSX2+10	Screw $\phi 2 \times 10$
M31	QXR0342	Pause Rod Assembly			
M32	QXR0465	Record Rod Assembly	M81	XTN26+5B	Tapping Screw $\phi 2.6 \times 5$
M33	QXR0420	Playback Rod Assembly	M82	XTN3+10B	Tapping Screw $\phi 3 \times 10$
M34	QMR1624	Rewind Rod-A	M83	XTN26+8B	Tapping Screw $\phi 2.6 \times 8$
M35	QMR1623	Fast Forward Rod-A	M84	XSX26+3	Screw $\phi 2.6 \times 3$
			M85	XTN3+25B	Tapping Screw $\phi 3 \times 25$



WIRING CONNECTION DIAGRAM MODEL RS-M10

NOTE: ■ indicates that only parts specified by the manufacturer be used for safety.

Ref. No.	Part No.	Part Name & Description
<b>TRANSISTORS</b>		
Q1, 2, 3, 4	2SC1684	Transistor
Q7, 8	2SC1318	"
Q301	2SC1318	"
Q401	2SC1383	"
Q402	2SC1684	"
Q403	2SA564	"
Q405, 406	2SC1383	"
<b>DIODES &amp; RECTIFIERS</b>		
D301	SEL103R	Light Emitting Diode
D401, 402	■ SM102	Rectifier
D403, 404, 405	QVD1S2473T	Diode
D501, 502	OA91	"
<b>INTEGRATED CIRCUITS</b>		
IC1, 2	QVITA7122APB	Integrated Circuit
IC3, 4	NE6468	"
<b>TRANSFORMERS</b>		
T7, 8	QLT2D26X	Headphone Transformer
T401	■ QLPD33ELC	Power Transformer *For All European Area Except United Kingdom
	■ QLPA44ELC	Power Transformer *For United Kingdom
<b>COILS</b>		
L1, 2	QLM927	MPX Filter
L3, 4	QLM0333	Record Equalizer Coil
L5, 6	QLQC0331	Bias Trap Coil
L301	QLB0188	Bias Oscillation Coil
<b>SWITCHES</b>		
S1	QSSI205T	Slide Switch (Record/Playback Select)
S2	QES1482	Lever Switch "Silver Type" (Tape Select)
	QES1485	Lever Switch "Black Type" (Tape Select)
S3	QES1484	Lever Switch "Silver Type" (Dolby IN/OUT Select)
	QES1487	Lever Switch "Black Type" (Dolby IN/OUT Select)
S4	QES1483	Lever Switch (Input Select)
	QES1486	Lever Switch (Input Select)
S5	QSW2214	Power Switch
S6	QSB0186	Leaf Switch (Muting Switch)
S7	■ QSR1409	AC Voltage Select Switch *For All European Area Except United Kingdom
	■ QSR1407	AC Voltage Select Switch *For United Kingdom
<b>JACKS</b>		
J1	QJA0257H	Microphone Jack
J2	QEJ5002S	Line IN/OUT and DIN Jack Assembly
J3	QJA0249C	Headphone Jack

